Tree Sweating

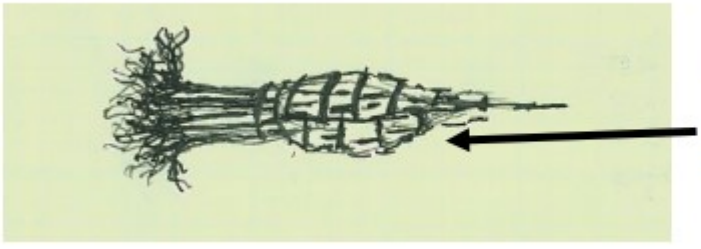
Why Do We Do It?

The shipment of bare-root trees has arrived fully dormant— are they ready to be planted in the landscape or installed in the gravel bed? Or, are they in such a deep state of rest that it could be days or weeks before they finally leaf out...if they leaf out at all?

Bare-root trees and shrubs are field-dug in the autumn, placed in jacketed cool storage facilities or "tree refrigerators" at around 32° F and 95% humidity for most of the winter and then shipped out, still in some state of winter rest. Some species will quickly begin active growth with no prompting when planted while others need to be gently awakened with a good "sweat." "Sweating" those trees, shrubs and vines that are in deep states of rest is a generations-old, reliable tree nursery practice that has very little (if any) research evidence to explain the process and why it works… but it works. It is a recipe that uses three ingredients: 1) Warmth 2) Humidity and 3) Time.

Get Ready to Sweat

Separate species and bundle in bunches. Do not mix species in a bundle; different species may require different amounts of time. Next, capture some warmth— place the plants on the bare ground or floor of a hoop house, barn or garage. If possible, temperatures should be supplemented if they are not in the 45-70°F range in the built structures. Warmth radiating from the earth is generally enough; direct sunlight is too much and will likely damage the plants, so keep the bundles shaded.



Bundle the trees or shrubs together by species. For ease of handling, bind the stems/branches together with twine.

Sources

1) http://www.dot.state.mn.us/environment/pdf/2014LandscapeInspectionManual.pdf
2) https://nursery-crop-extension.ca.uky.edu/content/sweating-nursery-stock-break-dormancy

This publication was made possible through a grant from the USDA Forest Service.

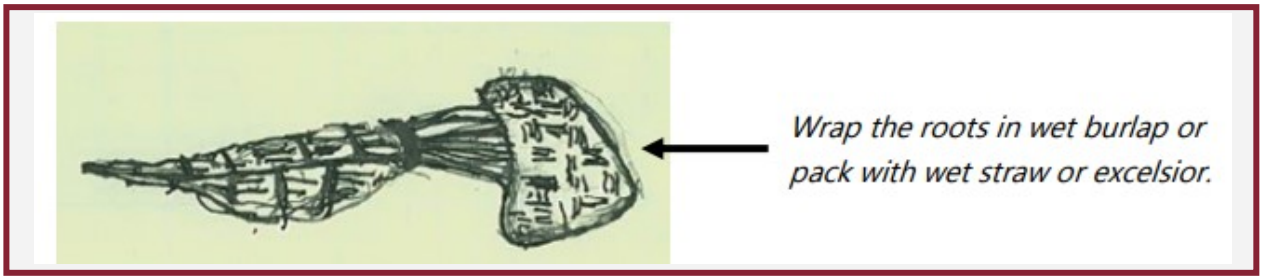
Tree Sweating, cont.

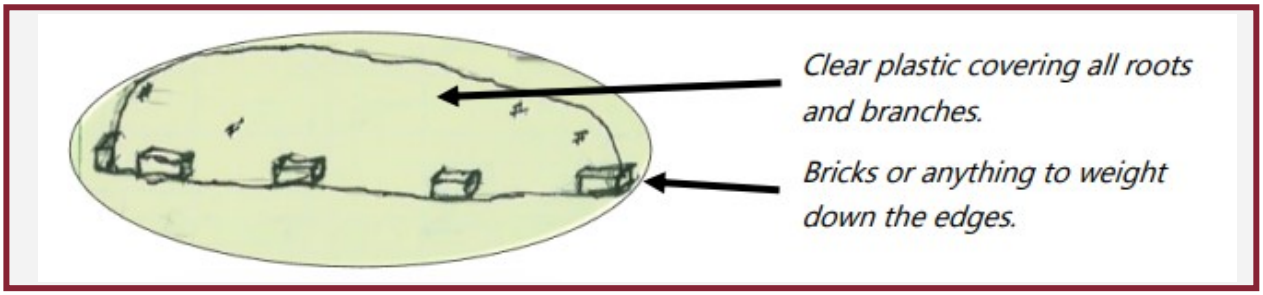
How to Sweat a Tree

Spray roots with a hose or dip into a tank, then cover entirely with materials that hold moisture, such as wet straw or burlap. Do not cover stems and branches with these materials. Buds need to be checked almost daily, so they need to be accessible. Cover the entire bundle – roots, stems and branches – with clear or opaque plastic and anchor down the edges to keep the interior warm and humid, like a greenhouse. Start inspecting buds after 2-3 days. Sweat time depends on the species, the size of the nursery stock (bigger takes longer), and the length of time in cold storage. Some plants may require 3-4 days while others will take two weeks. Start the sweating with all of the "needy" species at the same time, and pull them or uncover the tops as the buds begin to break.

What If Sweating is Skipped?

Trees will experience a shorter growing season in the first year and enter the winter with lower energy reserves. This makes them more likely to suffer winter season damage to roots, cambium and buds. When buying trees, inquire with the nursery supplier whether sweating has occurred.





Sources

1) http://www.dot.state.mn.us/environment/pdf/2014LandscapeInspectionManual.pdf
2) https://nursery-crop-extension.ca.uky.edu/content/sweating-nursery-stock-break-dormancy

This publication was made possible through a grant from the USDA Forest Service.

Tree Sweating, cont.

Which Species Need to Sweat?

There's some controversy here. Depending on the consulted resource there may be 16 to almost 40 different trees, shrubs or vines that either require or respond well to a good sweat.

Recommended Shrubs and Vines

*Barberry (Berberis)
Trumpet Vines (Campsis)
Variegated Dogwoods (Cornus)
Cotoneaster (Cotoneaster)
Potentilla (Potentilla)
Roses (Rosa)

Recommended Tree Species

Maples (Acer)
Serviceberry (Amelanchier)
Birches (esp. Betula nigra)
Musclewood (Carpinus)
Hickory (Carya)
Hackberry (Celtis)
Eastern Redbud (Cercis)
Pagoda Dogwood (Cornus)
Hawthorn (Crataegus)
Beech (Fagus)
Ash (Fraxinus)
Honeylocust (Gleditsia)
Crab/Apple (Malus)
Mulberry (Morus)
Black Gum (Nyssa)
Ironwood (Ostrya)
*Amur Corktree (Phellodendron)
Plum (Prunus)
*Ussurian Pear (Prunus)
Chokecherry (Prunus)
White Oak group (Quercus)
Skunkbush Sumac (Rhus)
*Black Locust (Robinia)
Weeping Willow (Salix)
European Mountain-ash (Sorbus)
Lilac (Syringa)
Bald Cypress (Taxodium)
Linden (Tilia)
Elm (Ulmus)

Always Beware Invasive Species

*Be careful with these species: check with your state regulatory agency to determine whether they are listed as invasive in your state. Note: only the female Amur Cork.

Gary Johnson and Ashley Reichard, July 2020

Sources

1) http://www.dot.state.mn.us/environment/pdf/2014LandscapeInspectionManual.pdf
2) https://nursery-crop-extension.ca.uky.edu/content/sweating-nursery-stock-break-dormancy

This publication was made possible through a grant from the USDA Forest Service.